1. At milk processing plant, the received milk can be subjected to thermalization process in a condition of

(A) 72°C for 45 sec
(B) 55°C for 1 min
(C) 100°C for 2 sec
(D) 65°C for 15 sec
(E) Answer not known

2. In dairy industry milk stored at low temperature creams rapidly and this process can be avoided by applying

(A) Use of lipase inhibitor
(B) Frequent exposure to light
(C) Stirring and aeration
(D) Use of anti foaming agent
(E) Answer not known

3. Milk must be chilled quickly below ———— immediately after milking to prevent spoilage by micro organisms.

(A) 0°C
(B) 2°C
(C) 4°C
(D) 8°C
(E) Answer not known

4. Choose the correct match with food related from the following.

1.	GATT	–	General Agreement on Tariffs and Trade
2.	GMP	–	Good Manufacturing Practices
3.	HACCP	–	Health Analysis and Critical Control Points
4.	APEDA	–	Agricultural and Processed food Export Development Authority

(A) (2),(3) and (4) (B) (2) and (3)
(C) (1) , (2) and (4) (D) (1), (3) and (4)
(E) Answer not known

5. The most heat resistant micro organism in milk is

(A) Mycobacterium tuberculosis
(B) Salmonella typhi
(C) Escherichia Coli
(D) Staphylococcus aureus
(E) Answer not known

6. Choose the fermented milks from the following products

1. Yoghurt
2. Kefir
3. Filmjolk
4. Cheese

(A) (1), (3) and (4)
(B) (1), (2) and (3)
(C) (2), (3) and (4)
(D) (1), (2) and (4)
(E) Answer not known

7. System of cleaning and standardisation which does not require daily dismantling of dairy equipment is known as

(A) Clean-In-Place (CIP)
(B) Manual Cleaning
(C) Milk Cooler Cleaning
(D) Pre rinsing
(E) Answer not known

8. Fat standardisation in Milk processing is defined as

(A) Adjustment of a predefined protein content (in %) in milk
(B) Adjustment of a predefined fat content (in %) in milk
(C) Adjustment of a predefined carbohydrate content (in %) in milk
(D) Adjustment of a predefined water (in %) in milk
(E) Answer not known

9. An ripened, particulate and slightly acidic cheese made of skim milk is called as

(A) Cheddar Cheese
(B) Swiss Cheese
(C) Cottage Cheese
(D) Cream Cheese
(E) Answer not known

10. In the process of churning the cream, the major change achieved by

(A) Air beaten into the cream and air bubble formation
(B) Degradation of Caesin
(C) Precipitation of protein
(D) Cream become homogenized
(E) Answer not known

11. The major function of rennet is to

(A) Digest lactose
(B) Split casein of milk
(C) Prevent cream formation
(D) Prevent change in pH
(E) Answer not known

12. Coagulation of milk by acid or enzyme is primarily carried out for

(A) Lactose free milk
(B) Butter production
(C) Ghee production
(D) Cheese production
(E) Answer not known

13. The bio preservative naturally produced in cheese is

(A) Sugar
(B) Nisin
(C) Whey
(D) Lactic acid
(E) Answer not known

14. Choose the correct statements(s) about cream :

1. Cream is the fat separated from milk
2. Percentage of fat in cream is always same
3. Cream is pasteurised at 70-75°C for 30 minutes to kill the bacteria.

(A) (1) only
(B) (1) and (2) only
(C) (1) and (3) only
(D) (2) and (3) only
(E) Answer not known

15. A water in oil avulsion separated from milk cream by short fermentation followed by mechanical agitation is called

(A) Margarine
(B) Yogurt
(C) Ghee
(D) Butter
(E) Answer not known

16. Which among the following is the moisture content of semi soft cheese as per FSSAI Regulation, 2011?

(A) Not more than 45%
(B) Not more than 52%
(C) Not more than 80%
(D) Not more than 36%
(E) Answer not known

17. Which among the following is the temperature of cold store for overnight storage of pasteurized milk?

(A) 0°C
(B) –4°C
(C) 2°C to 4°C
(D) –18°C
(E) Answer not known

18. Which of the following statements are false about CIP method of cleaning and sanitation of HTST pasteurizer?

(i) Rincing with phosphoric acid will curtile the efficiency of cleaning
(ii) Alkali wetting agents will increase cleaning efficiency
(iii) Final hot water rinse at 71-82°C till the whole system has been heated.

(A) (i) only
(B) (i) and (iii) only
(C) (i) and (ii) only
(D) (ii) and (iii) only
(E) Answer not known

19. Which of the following statements are true about selection of detergents for cleaning equipments?

(i) Weak alkalies may be used for tinned steel
(ii) For stainless steel all alkalies may be used
(iii) For mild steel weak alkalies may be used

(A) (i) only
(B) (i) and (iii) only
(C) (i) and (ii) only
(D) (ii) and (iii) only
(E) Answer not known

20. Which among the following are responsible for causing permanent water hardness in dairy industry?

(A) Sulphates
(B) Bicarbonate
(C) Calcium
(D) Magnesium
(E) Answer not known

21. The rate at which radiation energy emitted per unit time per unit area over all wavelengths and in all directions is known as

(A) Emissivity
(B) Transmissivity
(C) Reflectivity
(D) Total emissive power
(E) Answer not known

22. Identify the correct statement

(A) Prandtl number is large for more viscous fluids
(B) Prandtl number is smaller for low viscosity fluids
(C) Reynolds number is independent of viscosity
(D) Reynolds number decreases of viscosity increases
(E) Answer not known

23. The most common approach used to improve heat transfer to and from viscous solution is to use

(A) Twisted tapes in turbulent flow regime
(B) Twisted tapes in laminar flow regime
(C) Straight tapes in turbulent flow regime
(D) Straight tapes in laminar flow regime
(E) Answer not known

24. One face of a copper plate of 3 cm thickness is maintained at 400°C, and the other face is maintained at 100°C. The quantity of heat transferred through the plate is

(Assume the thermal conductivity of copper is 370 W/m°C)

(A) 11.1 MW/m^2
(B) 7.4 MW/m^2
(C) 3.7 MW/m^2
(D) 22.2 MW/m^2
(E) Answer not known

25. The SI unit for fouling factor is

(A) (m.K)/W
(B) (m^2-K)/W
(C) W/m^2.K
(D) K/W.m^2
(E) Answer not known

26. Which of the following is NOT an example of natural convection?

(A) Heating of a vessel containing liquid by gas flame
(B) Flow of air across a heated radiator
(C) Heat flow to a fluid pumped through a heated pipe
(D) Heat of a room by means of a steam radiator
(E) Answer not known

27. The ratio of Kinematic viscosity to the thermal diffusivity is known as

(A) Stefan's Constant
(B) Fourier Number
(C) Prandtl Number
(D) Grashof Number
(E) Answer not known

28. The unit of thermal resistance to heat transfer by conduction is

(A) K/J
(B) K/J.m
(C) K/W
(D) K/W.m
(E) Answer not known

29. The ratio of wall heat transfer rate to the heat transfer by conduction is known as

(A) Reynolds Number
(B) Grashof's Number
(C) Prandtl Number
(D) Nusselt Number
(E) Answer not known

30. The design factor that influences the performance of a reciprocating compressor is

(A) Revolutions per minute
(B) Type of refrigerant
(C) Suction pressure
(D) Piston displacement
(E) Answer not known

31. In the evaporation process during film boiling, beyond Critical Heat Flux (CHF)

(A) The coefficient of heat transfer increases
(B) The coefficient of heat transfer remains constant
(C) The coefficient of heat transfer decreases
(D) The coefficient of heat is independent of change of temperature
(E) Answer not known

32. Which of the following processes is NOT contributing to refrigeration?

(A) Seebeck effect
(B) Vapor compression cycle
(C) The absorption cycle
(D) Peltier effect
(E) Answer not known

33. Economy of a tubular evaporator is

(A) The number of kilograms of water vaporized per kg steam fed
(B) The number of kg of steam produced per kg steam fed
(C) The number of kg feed concentrated per kg of steam fed
(D) The number of kg water vaporized per unit volume of the evaporator
(E) Answer not known

34. The refrigerant with the highest latent heat of vaporization is

(A) Dichloro difluoro methane
(B) Monochloro difluoro methane
(C) Ammonia
(D) Methylene chloride
(E) Answer not known

35. Match the following refrigerants to its chemical formula :

(a)	Dichloro difloromethane	1.	$CHClF_2$
(b)	Methylene chloride	2.	CCl_2F_2
(c)	Chlorodifluoro methane	3.	NH_3
(d)	Ammonia	4.	CH_2Cl_2

	(a)	(b)	(c)	(d)
(A)	4	1	2	3
(B)	2	4	1	3
(C)	3	4	1	2
(D)	1	3	2	4

(E) Answer not known

36. Boiling point of ammonia is

(A) –38.7°C (B) –35.6°C
(C) –33.3°C (D) –36.8°C
(E) Answer not known

37. What is the purpose of kneading of dough in Bread making?

(A) to improve the structure (B) to increase sweetness
(C) crust crispiness (D) to increase saltiness
(E) Answer not known

38. What is over spring in bread making?

(A) Puffing of Bread (B) Charring of Bread
(C) Fermentation (D) Staling of bread
(E) Answer not known

39. Hardness or softness of wheat is related to the degree of adhesion between

(A) Starch and protein
(B) Lipidic contents
(C) Lipids and proteins
(D) Starch and lipids
(E) Answer not known

40. Wheat flour is fortified with ———— upto 10% to make "Poushtik Atta" to improve its functionality?

(A) Soy flour
(B) Corn flour
(C) Gram flour
(D) Rice flour
(E) Answer not known

41. Foods generally brown and crisp on the top, soft and porous in the centre-Name the type of processing of foods.

(A) Leavening
(B) Baking
(C) Roasting
(D) Frying
(E) Answer not known

42. Which statement best describes the composition of Ragi, the Millet?

P. Rich in calcium and B-group vitamins
Q. Proteins (7%), Carbs (78%), Fats (1.5%)
R. Proteins (2%) Carbs (92%) , Fats (2.5%)
S. Rich in Riboflavin

(A) P, Q and S
(B) P and Q
(C) P, R and S
(D) P and R
(E) Answer not known

43. What happens during malting of Barley?

(A) Amylases and proteases are activated in the vesting grain
(B) Amylases and proteases are destroyed before germination
(C) Amylases and proteases are destroyed after germination
(D) Germination of the grain is stopped
(E) Answer not known

44. Biofortification of Rice "Golden Rice" is enhanced with

(A) Magnesium
(B) Calcium
(C) Food colors
(D) B-Carotene
(E) Answer not known

45. Which is the principal protein present in rice?

(A) Albumin
(B) Globulin
(C) Oryzenin
(D) Prolamins
(E) Answer not known

46. Unpolished Rice is liable to develop rancidity because of

(A) Bran
(B) Germ
(C) Aleurone layer
(D) Endosperm
(E) Answer not known

47. One mineral that is not added back into the white rice is?

(A) Potassium
(B) Iron
(C) Calcium
(D) Magnesium
(E) Answer not known

48. ———— enzyme is used to convert glucose to fructose during corn syrup processing.

(A) Amylase
(B) Lipase
(C) Isomerases
(D) Invertase
(E) Answer not known

49. Corn steep liquor, used as a protein source majorly in

(A) Fermentation production of antibiotics
(B) Baking
(C) Frying
(D) Confectioneries
(E) Answer not known

50. ———— are called as poor man's meat.

(A) Oils and fats
(B) Cereals
(C) Pulses
(D) Coconut
(E) Answer not known

51. Which is not adopted in fat hardening (or) partial hydrogenation process?

(A) Nickel metal
(B) Keiselguhr catalyst
(C) Alumina
(D) Very low temperature
(E) Answer not known

52. ———————— are popularly known as Nutri-cereals.

(A) Soy
(B) Millets
(C) Barley
(D) Wheat
(E) Answer not known

53. ———————— present in palm oil can suppress the synthesis of cholesterol in liver.

(A) Tocotrienols
(B) Palmitic acid
(C) Oleic acid
(D) Linolenic acid
(E) Answer not known

54. What is the purpose of adding vinegar in mayonnaise preparation?

(A) to avoid rancid
(B) to enhance flavor
(C) to disintegrate oil
(D) for emulsification
(E) Answer not known

55. ———————— are a group of natural products possessing the property of producing lather with water, in pulses.

(A) Phytates
(B) Saponins
(C) Trypsin inhibitors
(D) Alkaloids
(E) Answer not known

56. A major industrially important by product is formed during vegetable oil refining. Name that, product used as an emulsifier.

(A) Pigments
(B) Lecithin
(C) Fatty acids
(D) Wax
(E) Answer not known

57. The main parts of an agitator are ———————— and ————————

(A) Valve and blade
(B) Lub and valve
(C) Lub and blade
(D) Bearing and shaft
(E) Answer not known

58. An internal pressure equivalent to 200 mm water gauge or 200 kg/m^2 is specified for

(A) Non-pressure tanks
(B) Class - A tanks
(C) Class - B tanks
(D) Fixed roof tanks
(E) Answer not known

59. Suitable sizes of plates or strips are specified in ————————

(A) IS - 2062
(B) IS - 1730
(C) IS - 803
(D) API standard 650
(E) Answer not known

60. During filling of volatile liquids in storage tanks, loss of liquid occurs as ————————

(A) liquid only
(B) vapour only
(C) air-vapour mixture
(D) both (A) and (B)
(E) Answer not known

61. The sigma ($\sum$) value in food separation process is ————————

(A) A function of fluid and particle properties
(B) Independent of operating conditions
(C) The cross sectional area of a gravity settling tank of the same separation capacity as centrifuge
(D) An approximation of flow patterns in a centrifuge
(E) Answer not known

62. Swenson-Walker crystallizer is

(A) Continuous jacketed trough crystallizer
(B) Vacuum crystallizer
(C) Agitated tank crystallizer
(D) Evaporative crystallizer
(E) Answer not known

63. The solution which is in equilibrium with an excess of solid solute at a given temperature is called ————————

(A) Concentrated solution
(B) Saturated solution
(C) Ideal solution
(D) Strong solution
(E) Answer not known

64. Evaporator crystallizer are widely used for separating ————————

(A) Crystals from inorganic salts
(B) Vapours from inorganic salts
(C) Water from fruit juices
(D) Both (B) and (C)
(E) Answer not known

65. The ratio of highest value of the stress at fillet notch to the nominal stress given by elementary equation for minimum cross section is called as ————————

(A) Longitudinal stress
(B) Circumferential stress
(C) Stress concentration factor
(D) Ligment efficiency
(E) Answer not known

66. The greatest stress at which failure of the material takes place is ————————

(A) Proof stress
(B) Yield stress
(C) Ultimate stress
(D) Elastic limit
(E) Answer not known

67. The type of corrosion which is not easily detected and breakage occurs suddenly without any indication is ————————

(A) Stress corrosion
(B) Fatigue corrosion
(C) Erosion corrosion
(D) Selective leaching
(E) Answer not known

68. A measure of deformability of the material determined by percentage of elongation or reduction of area is ————————

(A) Ductility
(B) Resilience
(C) Toughness
(D) Hardness
(E) Answer not known

69. The material of construction for evaporators in food processing is

(A) Aluminium
(B) Copper
(C) Monel
(D) Stainless steel
(E) Answer not known

70. Which of the following does not affect the rate of drying?

(A) Gas velocity
(B) Humidity of gas
(C) Area of the drying surface
(D) Angle of repose of product
(E) Answer not known

71. The ratio of rate of mass of water vapour produced from the feed per unit rate of steam consumed is known as ————————

(A) steam pressure

(B) steam economy

(C) Heat transfer rate

(D) Specific heat of concentrated product

(E) Answer not known

72. The rule that states a linear relationship between the boiling point temperature of the solution and the boiling point temperature of water at the same pressure is

(A) Reynolds number

(B) Grash of number

(C) Duhring rule

(D) Rayleigh number

(E) Answer not known

73. The three dimensional approach used in effectiveness - NTU method for designing a heat exchanger are

(A) Heat capacity rate ratio, heat exchanger effectiveness and number of transfer units

(B) Mean temperature difference, heat transfer rate and number of transfer units

(C) Log mean temperature, heat exchanger effectiveness and number of transfer units

(D) Heat transfer rate ratio, heat exchanger effectiveness and number of transfer units

(E) Answer not known

74. Which type of heat exchangers are most suited for low viscosity liquids?

(A) Plate type heat exchangers
(B) Tubular heat exchangers
(C) Scraped surface heat exchangers
(D) Steam infusion heat exchangers
(E) Answer not known

75. The type of evaporators suitable for orange juice processing is

(A) Pan evaporator
(B) Rising film evaporator
(C) Falling film evaporator
(D) Agitated thin film evaporator
(E) Answer not known

76. The most common remedy to overcome reduced heat transfer due to fouling is by using ————————

(A) larger surface area
(B) higher temperature gradients
(C) direct steam injection
(D) longer contact period
(E) Answer not known

77. Match the following correctly with regard to the functions of meat smoking agents?

(a)	Aldehydes	1.	Smoky flavour
(b)	Phenols	2.	Bactericidal
(c)	Formaldehyde	3.	Bacteriostatic
(d)	Polycyclic hydro carbons	4.	Contribute colour

	(a)	(b)	(c)	(d)
(A)	3	1	2	4
(B)	1	3	4	2
(C)	2	4	1	3
(D)	1	3	2	4

(E) Answer not known

78. Assertion [A] : Smoking of meat causes destruction of thiamine.

Reason [R] : Smoking helps to stabilize the fat-soluble vitamins.

(A) [A] is true but [R] is false

(B) Both [A] and [R] are true and [R] is the correct explanation of [A]

(C) [A] is false, [R] is true

(D) Both [A] and [R] are true, but [R] is not the correct explanation of [A]

(E) Answer not known

79. When collagen of meat is heated, results in the formation of

(A) Gliadin
(B) Glutamic acid
(C) Glucose
(D) Gelatin
(E) Answer not known

80. The color of the meat remains for a longer time because

(A) curated with nitrates
(B) alkali treatment
(C) heat treatment
(D) addition of colorants
(E) Answer not known

81. ———— is an animal fat obtained by the heat rendering of fatty tissues.

(A) Margarine
(B) Vanaspati
(C) Lard
(D) Butter
(E) Answer not known

82. Due to glycolysis in post-mortem muscle, ———— is accumulated as a waste product.

(A) Propionic acid
(B) Kojic acid
(C) Lactic acid
(D) Stearic acid
(E) Answer not known

83. ———— is the largest single component of muscle by weight.

(A) Water
(B) Carbohydrates
(C) Proteins
(D) Fats
(E) Answer not known

84. Arrange the following events of dressing of poultry

(1) bleeding
(2) defeathering and singeing
(3) stunning
(4) scalding

(A) (2), (3), (1), (4)
(B) (1), (2), (4), (3)
(C) (3), (1), (4), (2)
(D) (4), (3), (2), (1)
(E) Answer not known

85. Which among the following are intra cellular proteins of animal tissues?

(A) sarcoplasmic proteins
(B) collagen
(C) elastin
(D) reticulin
(E) Answer not known

86. Which among the following are least tender cuts in beef?

(A) Rump
(B) Fillet
(C) Flank
(D) Wing Rib
(E) Answer not known

87. Assertion [A] : Fertile eggs get deteriorated less rapidly than infertile eggs.

Reason [R] : There is increase in amount of free ammonia on storage of eggs.

(A) [A] is true but [R] is false

(B) [A] is false, but [R] is true

(C) Both [A] and [R] are true and [R] is the correct explanation of [A]

(D) Both [A] and [R] are true, but [R] is not the correct explanation of [A]

(E) Answer not known

88. Assertion [A] : As the size of air cell increases, the quality of egg deteriorates.

Reason [R] : Size of air cell increases due to gain of moisture.

(A) [A] is true but [R] is false

(B) [A] is false, [R] is true

(C) Both [A] and [R] are true and [R] is the correct explanation of [A]

(D) Both [A] and [R] are true, but [R] is not the correct explanation of [A]

(E) Answer not known

89. What is the average laugh units to find out the good quality of egg?

(A) 30 laugh units

(B) 36 laugh units

(C) 72 laugh units

(D) 60 laugh units

(E) Answer not known

90. Name the phospholipid abundantly present in Eggs?

(A) Cysteine
(B) Lecithin
(C) Arachidonic acid
(D) Lysine
(E) Answer not known

91. In the production of Egg powder which step prevents undesirable discoloration and aroma due to reaction between amino acids and sugars

(A) Pasteurisation
(B) Glucoseoxidase / catalase treatment
(C) Homogenisation
(D) Spray drying
(E) Answer not known

92. Good quality fish are selected based on the following points.

1. Appearance is bright and scales are intact
2. Eyes are bright and clear
3. Gills are red and free from slime
4. It has strong fishy odour

(A) (1) and (2)
(B) (1), (2) and (3)
(C) (1), (2), (3) and (4)
(D) (1), (2) and (4)
(E) Answer not known

93. Fish glue is made by boiling ———— of fish.

1. the skin
2. the bones
3. the swim bladders

(A) (1) and (2)
(B) (1) and (3)
(C) (2) and (3)
(D) (1), (2) and (3)
(E) Answer not known

94. Sodium benzoate is used as ———— in fish processing.

(A) Flavor enhancer
(B) Preservative
(C) Functional ingredient
(D) Colorant
(E) Answer not known

95. ———— are the natures richest source of zinc in sea foods.

(A) Seer fish
(B) Prawn
(C) Oyesters
(D) Crab
(E) Answer not known

96. During quick freezing process, the whole fish are sprinkled with ———— so as to form a glaze of ice to protect from

(A) Water, Oxidation
(B) Mineral oil, deterioration
(C) Formalin, drying
(D) Coolant, drying
(E) Answer not known

97. Name the purplish known pigment in apple

(A) Carotenoids
(B) Chlorophyll
(C) Lycopene
(D) Anthrocyanins
(E) Answer not known

98. What is the principle behind making puree and sauces in fruit and vegetable processing?

(A) Condensation
(B) Evaporation
(C) Osmosis
(D) Simmering
(E) Answer not known

99. The reaction of an unstable diallyl trisulphinate to diallyl disulphide gives off odour when the ———— is crushed.

(A) Garlic
(B) Cabbage
(C) Mustard
(D) Onion
(E) Answer not known

100. Fruits and vegetables contain tannins reacts with ———— to prom black ferric tannate.

(A) Iron
(B) Copper
(C) Zinc
(D) Aluminium
(E) Answer not known

101. The type of 'Can' used for raspberry fruit pulp?

(A) A.R Lacquered Cans
(B) Sulphur lacquered Cans
(C) C-Enamel container
(D) Plain Cans (Aluminium Coated)
(E) Answer not known

102. Low cost, environment friendly, zero energy cool chambers based on the principle of ———— have been recommended for storage of fruits and vegetables.

(A) Freezing
(B) Chilling
(C) Evaporative cooling
(D) Refrigeration
(E) Answer not known

103. The spices are recommended to be dried below ———— °C to preserve its delicate flavour and colour.

(A) 25
(B) 35
(C) 45
(D) 55
(E) Answer not known

104. The essential oil in clove is

(A) Eugenia
(B) Terpineol
(C) Vannilin
(D) Cuminol
(E) Answer not known

105. Black and green tea contain similar amount of flavonoids

(A) The above statement is not correct
(B) The above statement is partially correct
(C) The above statement is correct
(D) The above statement is partially incorrect
(E) Answer not known

106. Which of the following is classified as stimulating beverage?

(A) Warm milk
(B) Fruit juice
(C) Butter milk
(D) Egg nogs
(E) Answer not known

107. Which among the following technologies, ———————— is called as "Green Technology"?

(A) Dehydration technology
(B) Chemical processing
(C) Blanching
(D) Membrane processing technology
(E) Answer not known

108. The cocoa beans are cleaned to remove all extraneous material and roasted to bring out ———————— flavor and color.

(A) Vanila
(B) Chocolate
(C) Coffee
(D) Tea
(E) Answer not known

109. Cooking vegetables directly from the frozen state minimizes ———————— changes, but will increase the cooking time.

(A) Thawing
(B) Blanching
(C) Pasteurization
(D) Sterilization
(E) Answer not known

110. Individually quick frozen vegetables are frozen by blowing ———————— as vegetables pass through the freezer on a belt.

(A) Cold air
(B) Warm air
(C) Hot air
(D) Dry air
(E) Answer not known

111. The reason behind the drinking of red wine in Christianity as a religious celebrations is

(A) It is a healthy drink
(B) The symbolic of the blood of Jesus
(C) It helps to cleanse the body
(D) Bright red colour
(E) Answer not known

112. ———————— is prepared from the juice of the palm tree.

(A) Nira
(B) Feni
(C) Cider
(D) Toddy
(E) Answer not known

113. Which of the following is not a example of IMF (Intermediate Moisture Foods)?

(A) Figs
(B) Fruit cakes
(C) Honey
(D) Milk powder
(E) Answer not known

114. Which among the following method of drying, ———————— is the most effective method to minimize the losses of nutrients especially Vitamin 'C' occur by oxidation.

(A) Vacuum drying
(B) Freeze drying
(C) Drying by osmosis
(D) Solar drying
(E) Answer not known

115. Which type of dryer comes under the "sub-atmospheric dehydration" process?

(A) Cabinet drier
(B) Freeze drier
(C) Fluidized bed dryer
(D) Spray drier
(E) Answer not known

116. What is the principle behind freeze drying of fruits or vegetables?

(A) By liquefaction
(B) By sublimation
(C) By condensation
(D) By evaporation
(E) Answer not known

117. The moisture of the coffee bean is reduced to ———————— per cent by weight

(A) 12 – 25%
(B) 15 – 30%
(C) 35%
(D) 45%
(E) Answer not known

118. The moisture held by a material in excess of the equilibrium moisture content corresponding to saturation humidity is called

(A) Bound moisture content
(B) Unbound moisture content
(C) Free moisture content
(D) Equilibrium moisture content
(E) Answer not known

119. When a product is taken off the market believing it may cause harm to the consumers, is called

(A) Reinforce
(B) Reinspect
(C) Recall
(D) Revise
(E) Answer not known

120. Which among the following is the most used food safety and quality control tool in Food Industries?

(A) Auditing Inspections
(B) Gantt charts
(C) Control charts
(D) Cause-and-effect diagrams
(E) Answer not known

121. GATT stands for

(A) General Agreement for Trade and Taxes
(B) General Agreement for Tariffs and Trade
(C) General Assignment for Trade and Tariff
(D) General Assignment for Trade and Taxes
(E) Answer not known

122. Mycotoxins in food is a

(A) Physical hazard
(B) Chemical hazard
(C) Food poison
(D) Biological hazard
(E) Answer not known

123. The first city in India to be accorded the CSFH tag by FSSAI in 2008 in

(A) Delhi
(B) Mysore
(C) Ahmedabad
(D) Banglore
(E) Answer not known

124. ———————— are the foundations for any effective food safety management system by providing a system to control food safety hazards.

(A) HACCP
(B) GMP
(C) GHP
(D) FSMS
(E) Answer not known

125. Illness caused by the consumption of bacterial toxin formed in the foods is

(A) Food poison
(B) Food intoxication
(C) Chemical poison
(D) Vector borne illness
(E) Answer not known

126. The online portal developed by FSSAI that offers a centralised platform to the consumers to share concerns regarding food hygiene and safety is

(A) FOSCORIS
(B) FOSCOS
(C) Food safety connect
(D) FSMS
(E) Answer not known

127. The FSSA was published in the year

(A) 2000
(B) 2005
(C) 2006
(D) 2010
(E) Answer not known

128. Which of the following is NOT among the seven principles of HACCP?

(A) Establishment of monitoring procedures for each CCP
(B) Establishment of corrective actions
(C) Identification of quality control systems
(D) Establishment of verification procedures
(E) Answer not known

129. Why is HACCP required in a food industry?

(A) Control potential hazard in food industry
(B) Controls only microbial hazards in food industry
(C) Controls only physical hazards in food industry
(D) Controls only chemical hazard in food industry
(E) Answer not known

130. The primary focus of total quality management

(A) Reducing costs
(B) Improving employee satisfaction
(C) Ensuring product safety
(D) Continuous improvement and customer satisfaction
(E) Answer not known

131. ———————— are protocols for safely handling food to prevent contamination.

(A) GAP – Good Agricultural Practices
(B) GHP – Good Horticultural Practices
(C) GHP – Good Handling Practices
(D) GMP – Good Manufacturing Practices
(E) Answer not known

132. Full form of FOSTAC

(A) Food Safety Training and Commission
(B) Food Safety Training and Certification
(C) Food Safety Trading and Certification
(D) Food Safety Trading and Commission
(E) Answer not known

133. A sensory test protocol considers which of the following?

(1) Sample serving procedures
(2) Sample size
(3) Sample serving temperatures
(4) Serving containers

(A) Only (3)
(B) (2) and (3)
(C) (1), (2) and (3)
(D) (1), (2), (3) and (4)
(E) Answer not known

134. The lowest level at which a stimulus can be detected is called

(A) Absolute Threshold
(B) Recognition Threshold
(C) Differential Threshold
(D) Terminal Threshold
(E) Answer not known

135. Which of the following is most effective palate cleanser for evaluating the jelly, coffee, tea and spicy chips.

(A) Table water crackers
(B) Pectin solution
(C) Warm water
(D) Milk
(E) Answer not known

136. Choose the right matches among type

(1)	Surface	–	Particles
(2)	First bite	–	Dryness
(3)	Chew down	–	Grittiness
(4)	Residual	–	Chalky

(A) (1), (3) and (4) are correct (B) (1), (2) and (3) are correct
(C) (2), (3) and (4) are correct (D) (4), (1) and (2) are correct
(E) Answer not known

137. Match correctly the testing of various components in foods with their corresponding testing tools.

(a)	TSS	1.	Butyrometer
(b)	Quantitative analysis of sugar	2.	Polariscope
(c)	Butter in milk	3.	Rapid visco analyser
(d)	Functional properties of starch	4.	Refractometer

	(a)	(b)	(c)	(d)
(A)	4	3	1	2
(B)	2	1	3	4
(C)	3	4	1	2
(D)	4	2	1	3

(E) Answer not known

138. A savoury and subtle taste that is associated with soupy or brothy note

(A) Sour
(B) Umami
(C) Bitter
(D) Salty
(E) Answer not known

139. Single wall corrugated board packages consist of flute and liner in the order of

(A) Liner, flute, liner
(B) Liner, flute, flute
(C) Liner, liner, flute
(D) Flute, liner, flute
(E) Answer not known

140. Choose the correct statements about plastic packages

(1) They are light weight and less expensive
(2) They are not recycled
(3) They are not total barriers to gases
(4) They are leak-proof

(A) (1), (2) and (3)
(B) (2), (3) and (4)
(C) (3), (4) and (2)
(D) (1), (3) and (4)
(E) Answer not known

141. Paper is generally termed board when its grammage exceeds ———— gsm.

(A) 150
(B) 200
(C) 250
(D) 300
(E) Answer not known

142. Lamination is

(A) The method of wrapping food material with certain packaging material and storing them at ambient temperature

(B) Combination of two or more materials into a single homogenous packaging web by means of adhesive, solvent or heat

(C) A type of packaging where the material used for packaging is made from substance obtained from middle lamella of cell wall

(D) Coating of zinc on surface of the packing material

(E) Answer not known

143. Match the type of seals in Group I to their application in Group II

Group I	Group II
(a) Pressure seals	1. Preserves or paste jars
(b) Normal seals	2. Pasteurised milk
(c) Vacuum seals	3. Carbonated beverages

	(a)	(b)	(c)
(A)	1	2	3
(B)	3	2	1
(C)	2	1	3
(D)	2	3	1

(E) Answer not known

144. Assertion [A] : Retortable pouch withstand high processing temperatures upto 121°C.

Reason [R] : They offer good shelf life to the product and require refrigeration or freezing for storage

(A) [A] is true but [R] is false

(B) Both [A] and [R] are true and [R] is the correct explanation of [A]

(C) [A] is false, [R] is true

(D) Both [A] and [R] are true, but [R] is not the correct explanation of [A]

(E) Answer not known

145. The packaging that performs some active functions beyond its inert passive containment is called

(A) Protective

(B) Passive

(C) Active

(D) Modified

(E) Answer not known

146. For modified atmosphere of fresh fruits ———————— oxygen level and for red meat ———————— oxygen level are preferred.

(A) Lower and higher respectively

(B) Higher and lower respectively

(C) Lower and lower respectively

(D) Higher and higher respectively

(E) Answer not known

147. Technique by which shelf life of product at normal temperatures is extended by packaging them suitably is called

(A) Modified atmosphere packaging
(B) Aseptic packaging
(C) Vacuum packaging
(D) Controlled atmosphere packaging
(E) Answer not known

148. Which one of the following is a disadvantage of using aluminium packaging?

(A) Barrier to moisture and gases
(B) Good weight: strength ratio
(C) Impermeable to light, moisture and odour
(D) Compatibility of use in microwave oven
(E) Answer not known

149. Match the following packaging type with their uses

(a)	Primary packaging	1.	Has specific collection system
(b)	One-way packaging	2.	Helps in reusing and recycling
(c)	Package recovery	3.	Has direct contact with the product
(d)	Returnable packaging	4.	Can be used only once

	(a)	(b)	(c)	(d)
(A)	2	3	1	4
(B)	3	4	2	1
(C)	1	4	3	2
(D)	4	2	1	3

(E) Answer not known

150. Choose the correct matches from the following:

(1) Climatic hazard – Heat, light

(2) Mechanical hazard – Moisture, cold

(3) Chemical hazard – Preservatives

(4) Microbial hazard – Bacteria, fungi

(A) (1) and (4) are correct

(B) (3) and (4) are correct

(C) (1) and (3) are correct

(D) (1), (2) and (4) are correct

(E) Answer not known

151. Recycled glass is called as

(A) Skillet (B) Cullet

(C) Fillet (D) Gillet

(E) Answer not known

152. Enzymatic activity in a packaged food can be controlled by choosing a packaging material that maintains low temperature and a_w

(A) Correct (B) Incorrect

(C) Not related factors (D) None of the above

(E) Answer not known

153. Packed product with a_w closer to 1 value have ———————— shelf life.

(A) Shorter (B) Longer

(C) Moderate (D) Infinite

(E) Answer not known

154. Draw and Wall Iron (DWI) cans are used for storing

(A) Heat processed food
(B) Carbonated beverages
(C) Non-carbonated beverages with nitrogen injection
(D) Both (C) and (B)
(E) Answer not known

155. What are metalized plastics?

(A) Steel coated plastics
(B) Chromium coated plastics
(C) Aluminium coated plastics
(D) Tin coated plastics
(E) Answer not known

156. ———————— is a process which imparts toughness or temper to the glass containers.

(A) Lacquering
(B) Electroplating
(C) Caning
(D) Annealing
(E) Answer not known

157. The process suitable for producing lighweigh glass bottles with superior mechanical performance is

(A) Wide Neck Blow and Blow (WNBB)

(B) Narrow Neck Blow and Blow (NNBB)

(C) Wide Neck Press and Blow (WNPB)

(D) Narrow Neck Press and Blow (NNPB)

(E) Answer not known

158. The metal cans consisting of a can body and two end pieces used for hermetically seal heat sterilised foods are called

(A) Single piece cans

(B) Two piece cans

(C) Three piece cans

(D) Four piece cans

(E) Answer not known

159. Match the species of the major stored grain pests :

(a) Lesser grain borer	1. Trogoderma granarium
(b) Khapra beetle	2. Plodia interpunctella
(c) Saw-toothed grain beetle	3. Rhyzopertha dominica
(d) Indian Meal moth	4. Oryzaphilus surinamensis

	(a)	(b)	(c)	(d)
(A)	1	3	2	4
(B)	3	2	1	4
(C)	4	1	2	3
(D)	3	1	4	2

(E) Answer not known

160. Choose the right matches among type.

(1) Morai type – Eastern and southern region

(2) Kuthla – Bihar and Uttar Pradesh

(3) Muda – Gujrat

(4) Kanaj – West Bengal

(A) (1) and (2) are correct

(B) (2) and (3) are correct

(C) (3) and (4) are correct

(D) (1) and (3) are correct

(E) Answer not known

161. A Pusa bin is made from

(A) Mud

(B) Plaster of Paris

(C) Wood

(D) Cement

(E) Answer not known

162. The major variables which cause various changes and deteriorations in food grains during storage

(A) Physical – Temperature and Humidity

(B) Chemical – Insects, fungi, mites

(C) Biological – Respiration and Heating

(D) Physiological – Moisture and Oxygen

(E) Answer not known

163. The estimated losses due to insects in India, have been estimated to be around ———————— of the country production.

(A) 5 – 10%
(B) 15%
(C) 2 – 4%
(D) 1%
(E) Answer not known

164. The process in which food deteriorates and makes undesirable changes in the product and becomes unfit for human consumption is

(A) Fermentation
(B) Fumigation
(C) Spoilage
(D) Blanching
(E) Answer not known

165. Pressure in shallow bins is determined by

(A) Ficks law
(B) Rankine formula
(C) Janssen's formula
(D) Fourier law
(E) Answer not known

166. ———————— are often used in bulk sheds for loading and unloading the grains.

(A) Belt conveyors
(B) Screw conveyors
(C) Chain conveyors
(D) Bucket elevators
(E) Answer not known

167. The word 'CAP' is used in storage structures expressed as

(A) Cover and Protection
(B) Clean and Process
(C) CAP and Plastic
(D) Cover and Plinth
(E) Answer not known

168. The modern storage bins are advantageous over the traditional bins due to

(A) Case of handling
(B) Quality control
(C) Provision of automation
(D) All of the above
(E) Answer not known

169. Which of the following statements are true about changes occuring in food grains during storage?

(i) Cereal grain's vitamins are gradually diminished in ordinary storage conditions

(ii) Reducing sugar and acidity decrease

(iii) Non reducing sugar increase and acidity decrease

(A) (i) only
(B) (i) and (iii) only
(C) (i) and (ii) only
(D) (ii) and (iii) only
(E) Answer not known

170. Which among the following is very effective in controlling rice grass hoppers?

(A) Arrangement of light traps
(B) Hand collecting and destroying
(C) Insecticidal treatment
(D) Stubble burning
(E) Answer not known

171. Storage conditions required to maintain seed quality of cereal grains

(A) Temperature – 20°C, Moisture – 12% max
(B) Temperature – 40°C, Moisture – 12% max
(C) Temperature – 20°C, Moisture – 7.5 max
(D) Temperature – 40°C, Moisture – 7.5 max
(E) Answer not known

172. The life of a food grain is manifested by

(A) Respiration
(B) Inspiration
(C) Evaluation
(D) Motivation
(E) Answer not known

173. Deterioration in the quality of grains, caused by

(A) Volume
(B) Mass
(C) Density
(D) Micro organisms
(E) Answer not known

174. If the height of godown is 5.64 m from plinth, number of bags that can be stacked is

(A) 10
(B) 20
(C) 30
(D) 40
(E) Answer not known

175. Rate of diffusion of fumigants into the stacked grains depends on

(1) Kind of fumigent

(2) Temperature

(3) Method of application

(4) Time of exposure

(A) (1) and (2)
(B) (1), (2) and (3)
(C) (1), (2), (3) and (4)
(D) (2), (3) and (4)
(E) Answer not known

176. The most common air flow rates for aerating paddy range from

(A) 0.02 – 0.20 (B) 0.07 – 0.28
(C) 0.05 – 0.25 (D) 0.10 – 0.25
(E) Answer not known

177. Squat silos are as large as having ———————— are being built.

(A) 48 m diameter, 10.5 m high walls and 25 m high roof
(B) 42 m diameter, 10 m high walls and 20 m high roof
(C) 40 m diameter, 11 m high walls and 30 m high roof
(D) 46 m diameter, 12 m high walls and 35 m high roof
(E) Answer not known

178. Which among the following are the benefits of aeration?

(A) Reduces moisture accumulation
(B) Reduces pests
(C) Increases the odour
(D) None
(E) Answer not known

179. Rhizopus stolonifer is a common fungus involved in the spoilage of

(A) Dairy products
(B) Bread, fruits and vegetables
(C) Meat products
(D) Peanuts
(E) Answer not known

180. Match the Fungal strains in Group I to the Mycotoxins that they produce in Group II

Group I	Group II
(a) Aspergillus flavus	1. Citrinin
(b) Penicillium patalum	2. Patulin
(c) Aspergillus melleus	3. Aflatoxin
(d) Penicillium palitans	4. Ochratoxin

	(a)	(b)	(c)	(d)
(A)	1	2	3	4
(B)	3	2	4	1
(C)	4	1	2	3
(D)	2	3	4	1

(E) Answer not known

181. The organisms which are able to grow in high concentration of salts are called as

(A) Xerotolerant
(B) Osmotolerant
(C) Halotolerant
(D) Resistant
(E) Answer not known

182. The minimum water activity required for growth of bacteria are

(A) 0.85
(B) 0.91
(C) 0.80
(D) 0.75
(E) Answer not known

183. At optimum temperature permitting microbial growth in food, most bacteria require a water activity in the range of

(A) 0.6 to 0.7
(B) 0.7 to 0.8
(C) 0.8 to 0.9
(D) 0.9 to 1
(E) Answer not known

184. Which one of the following vitamin is less likely affected by exposure of food to light?

(A) Vitamin D
(B) Riboflavin
(C) Vitamin A
(D) Vitamin C
(E) Answer not known

185. Which one of the following is not a factor affecting food deterioration?

(A) Presence of micro organism

(B) Activities of food enzymes

(C) Saturated fatty acid content of food

(D) Moisture content of food

(E) Answer not known

186. The bacteria which cause significant spoilage in wines but are necessary for the production of vinegar is

(A) Clostridium sp.

(B) Streptococcus thermophilus

(C) Acetobacter

(D) Lactobacillus sp.

(E) Answer not known

187. A process where the only organisms that survive processing are non pathogenic and incapable of developing within the product under normal conditions of storage is

(A) Pasteurisation

(B) Appertisation

(C) Radurization

(D) Blanching

(E) Answer not known

188. A Retort is an equipment used for ———————— of food.

(A) Frying

(B) Drying

(C) Canning

(D) Baking

(E) Answer not known

189. The chemical used for bleaching of flour is

(A) Benzoyl peroxide
(B) Mono sodium glutamate
(C) Propyl gallate
(D) Butylated hydroxy anisole
(E) Answer not known

190. Martin aseptic canning process was first commercialised in the year

(A) 1947
(B) 1950
(C) 1948
(D) 1949
(E) Answer not known

191. Aseptic packaging of food refers to

(A) Food sterilized after packing
(B) Food packed in sterile container
(C) Food is sterilized outside the can and packed in sterile container
(D) Food is sterilized but container is optional for sterilization
(E) Answer not known

192. Entoleter machine is used to preserve food by

(A) Removing moisture content
(B) Creating vaccum packing
(C) Destroying insect egg
(D) Irradiation
(E) Answer not known

193. Which one of the following is used in food as a preservative to inhibit the growth of mold?

(A) Sorbic acid
(B) Ascorbic acid
(C) EDTA
(D) Butylated Hydroxy Toluene
(E) Answer not known

194. The energy efficiency rate of ohmic heating during food processing is

(A) 20%
(B) 80%
(C) 75%
(D) 90%
(E) Answer not known

195. Penetration depth of X-rays in pulsed X-ray processing of food ranges between

(A) 600 – 4000 cm
(B) 6 – 40 cm
(C) 0.6 – 4.0 cm
(D) 60 – 400 cm
(E) Answer not known

196. Electroporation is

(A) The phenomenon in which a cell is exposed to high voltage electric pulses
(B) The phenomenon of cell exposed to membrane filtration
(C) The phenomenon of cell exposed to ultra filtration
(D) The phenomenon in which a cell is exposed to low radiation
(E) Answer not known

197. Hyper filtration is used to separate components like

(A) Ions, sucrose and flavour molecules
(B) Proteins, fats and minerals
(C) Fruit juices
(D) Dehydrated juice powder
(E) Answer not known

198. Food preservation using pulsed Electric fields is mainly applied to

(A) Seeds
(B) Flour
(C) Fruits and Vegetables
(D) Meat
(E) Answer not known

199. Which one of the following is not induced by irradiation of food?

(A) Oxidation
(B) Hydration
(C) Polymerization
(D) Hydrolysis
(E) Answer not known

200. Name the processing technology that uses elevated pressure with (or) without the addition of external heat

(A) Pulsed electric field processing
(B) High pressure processing
(C) Canning
(D) Ultra filtration
(E) Answer not known